IN THE CLAIMS:

Please rewrite the following claims:

1 (Twice Amended). An object detection and identification system, comprising:

a laser source with at least two emission apertures, wherein said laser source emits at least two laser signals into an environment;

at least one detector operationally responsive to at least one reflected laser signal, said at least one reflected laser signal receivable by said at least one detector after emission of said at least two laser signals from said laser source into and passing through said environment; and

a microprocessor operationally coupled to said at least one detector and having access to memory containing data associated with said environment and object characteristic data, wherein said microprocessor analyzes said at least one reflected laser signal received by said at least one detector to determine the x, y, and z presence and at least one characteristic of objects entering said environment, said at least one characteristic including at least one of an object's size, shape, orientation, speed and reflectance.

2 (Twice Amended). The system of claim 1 further comprising a memory for providing said system with storage of and access to environment and known object characteristic data.

3 (Twice Amended). The system of claim 2 including a database wherein characteristics of objects entering said environment are determined by said system based on comparison of said

characteristic data stored in a database.

5 (Twice Amended). The system of claim 4 wherein said laser source emits said at least two laser signals into said environment occupied by at least one object, said at least one detector detects said at least one reflected laser signal after said at least two laser signals pass through said environment and said microprocessor determines object characteristics based on comparison of said signals received by said detector with said known object characteristic data stored in said database.

6 (Once Amended). The system of claim 1, wherein said laser source is a monolithic vertical cavity surface emitting laser array.

12 (Twice Amended). A method for detecting the presence and characteristics of an object entering into and occupying part of a controlled environment using an object detection system, said method comprising the steps of:

sequentially emitting at least two laser signals into said controlled environment using a vertical cavity surface emitting laser structure;

receiving laser signals reflected from at least one object that may be within said controlled environment using at least one detector; and

determining the x, y and z presence of said at least one object in said controlled environment and further determining at least one characteristic of said at least one object, wherein at least one object is present and identifiable where said laser signals reflected by said at least one

one known object characteristic including at least one of an object's size, shape, orientation, speed and reflectance.

14 (Twice Amended). A method of training an object detection and identification system to determine characteristics of objects, said method comprising the steps of:

emitting at least two laser signals into a controlled environment using a vertical cavity surface emitting laser structure wherein at least one test object reflects at least one of said at least two laser signals;

receiving, by at least one detector, said at least one laser signal, said at least one laser signal representing at least one object characteristic, including at least one of an object's size, shape, orientation, speed and reflectance; and

storing said at least one object characteristic in a memory.

15 (Twice Amended). The method of claim 14 further comprising the steps of:

emitting at least two additional laser signals into a controlled environment using a vertical cavity surface emitting laser structure;

receiving at least one of said at least two additional laser signals reflected by an object with at least one detector; and

determining characteristics of said object by comparing characteristics of said at least one of said two additional laser signals reflected by and associated with said object and

16 (Twice Amended). The method of claim 15, wherein said microprocessor determines the characteristics of said object by determining which of said at least two additional laser signals emitted into said controlled environment are received in the form of and represented by said at least one laser signal of said at least two additional laser signals reflected by said object and received by said detector.

17 (Twice Amended). A method for detecting the x, y, z presence of and determining the characteristics of an object in an environment, comprising the steps of:

a) training a laser optic object detection system with the characteristics of an environment by:

emitting a first laser signal into a controlled environment using a vertical cavity surface emitting laser structure;

receiving, by at least one detector, a first reflected laser signal reflected off of environmental characteristics representing said environment;

storing said first reflected laser signal in memory, wherein said first reflected laser signal represents said environmental characteristics;

b) training said laser optic object detection system with the characteristics of at least one test object by:

emitting a second laser signal into said controlled environment using said vertical cavity surface emitting laser structure, wherein said at least one test object reflects a second

receiving, by said at least one detector, said second reflected laser signal, said

second reflected laser signal representing at least one object characteristic, and

storing said at least one object characteristic in said memory; and

c) detecting the presence of at least one object in said controlled environment by:

emitting a third laser signal into said controlled environment wherein an object

interferes with said third laser signal and thereby reflects a third reflected laser signal defining the x,

y and z location of said target;

receiving, by at least one detector, said third reflected laser signal; and

determining with a microprocessor the characteristics of said at least one object in

said controlled environment by comparing said third reflected laser signal to said at least one object

characteristic including at least one of an object's size, shape, orientation, speed and reflectance.

18 (Twice Amended). The method of claim 17, wherein characteristics of said at least one object

are determined by analyzing a plurality of third reflected laser signals received by said at least one

detector after different sequences of said plurality of third reflected laser signals are emitted by said

vertical cavity surface emitting laser structure as a plurality of third laser signals